

REMARKS/ARGUMENTS

New claim 7 has been added. Support for claim 7 is found at page 2, line 3 and page 4, lines 23-24.

Claims 1-5, and 7 are currently pending. Claim 6 has been withdrawn.

Rejection under 35 U.S.C. § 103

Claims 1-3 and 5 have been rejected as unpatentable over U.S. Patent No. 6,235,390 to Schwinn et al. ("Schwinn.") This rejection is respectfully traversed.

Schwinn fails to teach every element of the present claims and as such fails to establish a *prima facie* case of obviousness. Specifically, Schwinn fails to teach the use of a polyamide polymer flake having an RV in the range of 36-38, fails to teach the formation of a continuous filament of polyamide polymer with a yarn RV of about 51 to 54, and fails to teach the step of adding water vapor to a purge gas.

Schwinn teaches the use of a polyamide polymer flake having an RV in the range of about 40 to about 60 for introduction to an SPP process to achieve an RV in the range of 90 to 120. The present invention is characterized by a starting RV of 36 to 38. After processing the polymer flake according to the SPP steps of the present invention, this originally 36 to 38 RV flake has an RV in the range of 50 to 53 (see in the Specification on page 4, line 34). After submitting this "post-SPP" processed polymer flake to a melt spinning process, the measured RV of yarns is about one RV unit increased or a range of 51 to 54 (see in the Specification on page 5, line 12). The Examiner has alleged that the range of 40 to 60 encompasses the 36-38 RV of the present invention. However, Schwinn's preferred range is 45-50 which emphasizes that 40 is the bottom of the suitable range. As such the RV of the polymer flake in the present invention is outside the teachings of Schwinn.

Furthermore, Schwinn fails to provide any teaching of humidifying the purge gas prior to introduction to an SPP apparatus, in other words, Schwinn fails to teach the step of adding water vapor to the purge gas. One manner, by which the filament having an RV of 51-54 is achieved, is through the use of a humidified purge gas that has been treated with water vapor, thereby increasing the dew point.

By contrast, not only does Schwinn fail to teach the step of adding water vapor to the purge gas, but Schwinn teaches that reducing the humidity of the purge gas is an essential step. Schwinn teaches that the “water removal in turn drives the condensation reaction of the polyamide flake towards higher RV” (Col. 8, lines 61-62). Adding water to Schwinn’s process would destroy his goal which is to achieve an RV of the flake greater than 90 (Col. 11, lines 63-64).

The Examiner has stated at page 3 of the Office Action that “Gas sent through the SPP vessel 16 to remove water is directed back into the SPP vessel to constitute 50% of purge gas (humidifying a purge gas with water vapor) (see col. 8, lines 56-60; col. 9, lines 15-21).” Applicants respectfully disagree that this describes a humidifying process. To the contrary, Schwinn is describing a drying process. The passage at col. 8, lines 56-60 reads:

The serially connected dual desiccant bed regenerative drying system 14 is connected in parallel with the first conduit 34 between the blower 30 and the gas inlet 24. The drying system 14 is for drying the circulating gas increasing the removal of water from the flack in the SPP vessel 16.

The passage at col. 9, lines 15-21 reads:

Thus, it is more preferred that the portion of the gas that is passed through the drying system 14 is about 50% to 100% of the total gas stream circulated through the SPP vessel 16. Most preferred, the portion of the gas that is passed through the drying system 14 is about 70% to about 90% of the total gas stream circulate thought the SPP vessel 16.

Together, these two passages point out the polymer flake, including some amount of water absorbed thereon enters the SPP 16. The nitrogen purge gas passes through the SPP 16 from inlet 24 and exits at outlet 26, as shown in FIG. 1. A portion of the gas from outlet 26 then enters the drying system 14. The amount of gas that enters the drying system is from 50% to 100% as described above (Schwinn Col. 9, lines 15-21). Therefore, up to 50% of the purge gas is combined with the dried gas (from which water has been removed by the drying system 14) and returned to the SPP at inlet 24. The humidity of the gas at the inlet 24 is necessarily less than that that has originally entered at inlet 20 and less than the gas that has exited at outlet 26 (a portion of which goes to the drying system 14). Consequently, the purge gas that enters at inlet 24 includes less water than that which is introduced to the SPP 16 at inlet 20. As such Schwinn’s system serves to remove water vapor which not only fails to disclose the present humidifying step, but also teaches away from the humidifying step of present invention.

This fact is emphasized by Schwinn which also teaches the use of a very low dew point temperature circulating gas in the SPP vessel, no more than about 20°C but as low as -20°C. Pointing out that Schwinn rigorously avoids water vapor, as measured by dew point temperature, in the treatment vessel. As pointed out previously, the removal of water is essential to achieving Schwinn's high RV (>90).

Schwinn not only fails to include the step of humidifying the purge gas, but also purposefully minimizes the amount of water vapor present in the purge gas in order to achieve a high RV of the polyamide. Therefore, Schwinn not only fails to establish a *prima facie* case of obviousness for failing to disclose every element of the present claims, but also teaches away from the present invention. Accordingly, reconsideration and withdrawal of the rejections of claims 1-3 and 5 are appropriate and respectfully requested.

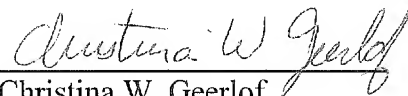
Claim 4 has been rejected under 35 U.S.C. §103(a) as unpatentable over Schwinn in view of U.S. patent No. 4,034,034 to Eberius ("Eberius") or in the alternative over Schwinn in view of Fourné (Synthetic Fibers, p.359). Each of Eberius and Fourné are cited to show additional features of dependent claim 4, and do not overcome any of the deficiencies of Schwinn in establishing a *prima facie* case of obviousness. Therefore, reconsideration and withdrawal of the rejection of claim 4 is respectfully requested.

CONCLUSION

For the reasons stated above, claims 1-5 and 7 are believed to be in condition for allowance. Accordingly, Applicants respectfully request that the Application be allowed. If prosecution may be further advanced, the Examiner is invited to telephone the undersigned to discuss this application.

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Respectfully submitted,


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